

## HAZARD CLASSIFICATION

### High Hazard

- Systems with booster pump facilities (such as Fire Department Connections [FDCs])
- Systems with transfer pumps
- Systems with storage tanks (plus air gap)
- Systems with antifreeze solutions
- Systems serving 5 or more stories above grade level of the backflow preventer

### Low Hazard

- Systems less than 5 stories above grade level with no pumps, storage tanks or chemical additives
- Dry pipe systems

Hazard	Fire Line Metered	Assembly
High	No	RPDA
Low	No	DCDA
Low	Yes	DCVA
High	Yes	RPZ

### ASSEMBLY EXAMPLES



REDUCED PRESSURE ASSEMBLY (RPZ)



DOUBLE CHECK VALVE ASSEMBLY (DCVA)



DOUBLE CHECK DETECTOR ASSEMBLY (DCDA)



REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA)

#### CROSS CONNECTION PROGRAM

3304 Lake Woodard Drive  
Raleigh, NC 27604  
919-250-7835  
919-212-5939 fax  
[cross.connection@raleighnc.gov](mailto:cross.connection@raleighnc.gov)  
[www.raleighnc.gov](http://www.raleighnc.gov)

## CROSS CONNECTION CONTROL PROGRAM

### Fire Backflow Assemblies



**CITY OF RALEIGH  
PUBLIC UTILITIES  
DEPARTMENT**

*Our Water, Our Future*

## **WHAT IS BACKFLOW?**

Water within a pipe is free to travel in either direction. Backflow is the undesirable reversal of the flow of water, other liquids, gases or other substances into the City of Raleigh Public Water Supply. Backflow can bring contaminants into your drinking water.

## **WHEN IS A BACKFLOW PREVENTER ASSEMBLY REQUIRED?**

Every fire system connected to the potable water service supplied by the public water system is required to install a backflow assembly on the fire service line. Protecting the potable water supply using a backflow assembly is in accordance with the Safe Drinking Water Act Amendments of 1996, North Carolina Public Water Supply and the Raleigh City Code. There is no grandfather clause exclusion for any connection to the public water supply.

## **HOW OFTEN IS A BACKFLOW ASSEMBLY ON A FIRE SERVICE LINE REQUIRED TO BE TESTED?**

A residential fire backflow preventer is required to be tested annually. (Raleigh City Code 8-2148 and 8-2154)

## **WHAT IS A BACKFLOW ASSEMBLY?**

A backflow assembly allows water to travel in only one direction. When working properly, it stops contaminants such as stagnant water from entering the potable water supply when either a backsiphonage or backpressure event occurs. A backflow assembly is required for properties that have a fire service line within the property limits.

## **DOES THE CITY PROVIDE TESTING SERVICE?**

The City does not provide this service. The City maintains a list of testers approved to work within the Raleigh water system. A tester is required to maintain a certification from a locally approved certification school, obtain annual calibration for a differential or electronic test kit, and other requirements as required by the Director of Public Utilities. Testers who do not meet these requirements are removed from the list until they have met all requirements. The test is required to be performed by a contractor on the list you will receive with notification to test.

## **WHY DOES THE BACKFLOW ASSEMBLY NEED TO BE TESTED?**

A backflow assembly is a mechanical assembly that is subject to failure. It is impossible to tell if it is working by appearance only. An operational test using a differential gauge is required to determine if the backflow is working properly.

## **WHO CAN INSTALL A BACKFLOW ASSEMBLY?**

According to North Carolina licensing laws, a licensed plumber or licensed general contractor licensed to install water service to within five feet of the building (when the backflow is installed exterior to a building), may install a backflow assembly on the potable water service including irrigation. A fire sprinkler contractor may install assemblies for fire sprinkler systems and private fire hydrants only.

## **WHO PAYS FOR THE BACKFLOW ASSEMBLY TEST?**

Installation of a backflow assembly is required by the N.C. Plumbing Code and therefore is installed on private property. Raleigh City Code defines the consumer as the responsible party to maintain and test their assembly. (Raleigh City Code 8-2154) It is advised to call several testers to compare prices. It is also the homeowner's responsibility to obtain a copy of the test report to keep for their records.

## **DO I HAVE TO OBTAIN AN OPERATIONAL TEST FOR A NEWLY INSTALLED BACKFLOW ASSEMBLY?**

Yes. A backflow assembly is a mechanical assembly subject to failure. Backflow assemblies may be subjected to environmental conditions that could cause wear or deterioration to the seals and parts of the assembly prior to installation.

